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//TALKING POINTS

-- YESTERDAY IN BERLIN, SECRETARY HAIG RECALLED THAT THE UNITED STATES, ALONG WITH MANY OTHER MEMBERS OF THE WORLD COMMUNITY, HAS BEEN, FOR SOME TIME, CONCERNED OVER REPORTS OF USE OF LETHAL CHEMICAL WEAPONS IN AFGHANISTAN AND SOUTHEAST ASIA. HE ANNOUNCED THAT THE UNITED STATES GOVERNMENT NOW HAD PHYSICAL EVIDENCE FROM SOUTHEAST ASIA FOUND TO CONTAIN THREE POTENT TOXIC AGENTS. AS SECRETARY HAIG PROMISED, WE ARE TAKING STEPS TO PROVIDE THIS INFORMATION TO THE WORLD COMMUNITY THROUGH THE UNITED NATIONS, ITS MEMBER GOVERNMENTS, AND THROUGH THE REPRESENTATIVES OF THE NATIONAL AND INTERNATIONAL PRESS HERE TODAY.

-- REPORTS OF THE USE OF CHEMICAL WARFARE AGENTS IN SOUTHEAST ASIA DATE BACK TO 1976. THE US HAS PUBLICLY EXPRESSED ITS CONCERN ABOUT THESE EVENTS ON NUMEROUS OCCASIONS OVER THESE YEARS. WE HAVE PRIVATELY AND FORMALLY EXPRESSED OUR CONCERN TO THE SOVIET, VIETNAMESE AND LAOTIAN GOVERNMENTS ONLY TO BE TOLD THAT OUR CONCERNS ARE UNFOUNDED. IN JUNE OF 1980, WE PREPARED A 125 PAGE COMPENDIUM OF REPORTS OF CW USE AND USED THAT COMPENDIUM AS A BASIS FOR SUPPORTING THE DECEMBER 1980 UN RESOLUTION TO ESTABLISH AN IMPARTIAL INTERNATIONAL INVESTIGATION INTO REPORTS OF CW USE. WE FOLLOWED THAT UP WITH AN UPDATE TO THE COMPENDIUM IN MARCH OF 1981.

-- AFTER EARLIER UNSUCCESSFUL ATTEMPTS TO OBTAIN PHYSICAL EVIDENCE OF CW USE, WE HAVE RECENTLY UNCOVERED

State Dept. review completed

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SIGNIFICANT--THOUGH PRELIMINARY--INFORMATION TO DEMONSTRATE CLEARLY THAT OUR CONCERNS WERE ENTIRELY JUSTIFIED. SPECIFICALLY, WE BELIEVE WE HAVE OBTAINED GOOD EVIDENCE THAT RATHER THAN A TRADITIONAL LETHAL CHEMICAL AGENT, THREE POTENT AND LETHAL MYCOTOXINS OF THE TRICHOTHECENE (TRI-COTHEE-SCENE) GROUP HAVE BEEN USED. A MYCOTOXIN IS A POISON TYPICALLY PRODUCED IN NATURE BY LIVING ORGANISMS.

-- ANALYSIS OF A LEAF AND STEM SAMPLE FROM KAMPUCHEA HAS REVEALED HIGH LEVELS OF LETHAL MYCOTOXINS OF THE TRICHOTHECENE GROUP. THE LEVELS DETECTED WERE UP TO TWENTY TIMES GREATER THAN ANY RECORDED NATURAL OUTBREAK. SINCE NORMAL BACKGROUND LEVELS OF THESE TOXINS ARE ESSENTIALLY UNDETECTABLE, THE HIGH LEVELS FOUND ARE CONSIDERED TO BE ABNORMAL, AND IT IS HIGHLY UNLIKELY THAT SUCH LEVELS COULD HAVE OCCURRED IN A NATURAL INTOXICATION. IN POINT OF FACT, THESE MYCOTOXINS DO NOT OCCUR NATURALLY IN SOUTHEAST ASIA.

-- THE POSSESSION AND USE OF TOXINS IS A VIOLATION OF BOTH THE 1925 GENEVA PROTOCOL AND THE 1972 BIOLOGICAL WEAPONS CONVENTION, AS WELL AS THE RULES OF CUSTOMARY INTERNATIONAL LAW OF ARMED CONFLICT.

-- OVER THE PAST SEVERAL YEARS A NUMBER OF MEDICAL DOCTORS WORKING ON THIS PROBLEM HAVE VISITED SOUTHEAST ASIA. THEY VISITED THE BORDERS IN QUESTION, INTERVIEWED AND EXAMINED REFUGEES, REVIEWED MEDICAL RECORDS, INCLUDING PUBLIC HEALTH DATA, AND SPOKE DIRECTLY WITH EYEWITNESSES TO EVENTS IN BOTH LAOS AND KAMPUCHEA.

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-- DETAILED ANALYSIS OF THIS AND OTHER INFORMATION LEADS US TO CONCLUDE THAT MYCOTOXINS--NOT TRADITIONAL CHEMICAL WARFARE AGENTS--PRODUCED THE BIZARRE EFFECTS WHICH CAUSED REPORTED DEATHS.

-- THE TEST RESULTS WE HAVE RECENTLY OBTAINED TOGETHER WITH THE INFORMATION PROVIDED BY THE PHYSICIANS WHO HAVE VISITED SOUTHEAST ASIA REPRESENTS STRONG AND COMPELLING, BUT NONETHELESS PRELIMINARY, EVIDENCE THAT THE LETHAL AGENTS USED ARE MYCOTOXINS. I WANT TO CAUTION YOU THAT THERE ARE CERTAINLY OTHER AGENTS BEING USED THAT WE HAVE NOT YET IDENTIFIED. INCAPACITATING AND RIOT CONTROL AGENTS AS WELL AS OTHER POSSIBLE LETHAL AGENTS MAY BE INVOLVED. WE ARE ATTEMPTING TO OBTAIN ADDITIONAL INFORMATION FROM LAOS AND KAMPUCHEA IN AN EFFORT TO OBTAIN COOROBORATIVE EVIDENCE.

-- WE ARE SHARING THIS INFORMATION WITH THE UN GROUP OF EXPERTS INVESTIGATING CW USE AS WELL AS OUR FRIENDS AND ALLIES THROUGHOUT THE WORLD.

-- THE UNITED STATES BELIEVES THAT, IN LIGHT OF THIS NEW INFORMATION, INCREASED EFFORT MUST BE MADE TO VISIT THE REGIONS WHERE CHEMICAL ATTACKS ARE BEING REPORTED. WE HAVE THEREFORE URGED THE SECRETARY-GENERAL'S GROUP OF EXPERTS TO TAKE STEPS IMMEDIATELY TO VISIT REFUGEE CAMPS AND ~~THE~~ AREAS OF REPORTED ATTACKS IN KAMPUCHEA AND THE OTHER REGIONS IN QUESTION TO OBTAIN TESTIMONY FIRST HAND FROM EYEWITNESSES AND VICTIMS OF ATTACKS, MEDICAL PERSONNEL, OFFICIALS OF REFUGEE ORGANIZATIONS, AND ANY OTHER EVIDENCE

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AVAILABLE. WE HAVE ALSO URGED THAT THE UTMOST EFFORT BE MADE TO CONTACT AND OBTAIN TESTIMONY FROM THE MANY VICTIMS AND EYEWITNESSES WHO HAVE DEPARTED THE REFUGEE CAMPS AND STARTED NEW LIVES ELSEWHERE.

-- I WOULD NOW LIKE TO TURN THE FLOOR OVER TO A PANEL OF EXPERTS FROM STATE, DEFENSE, AND THE INTELLIGENCE COMMUNITY WHO ARE AVAILABLE TO ANSWER, ON BACKGROUND, YOUR QUESTIONS REGARDING THE DETAILS OF THE INFORMATION I HAVE JUST PROVIDED YOU.

Q. What does the United States intend to do with this information?

A: WE HAVE ALREADY SHARED THIS INFORMATION WITH MANY OF OUR ALLIES AND ARE PROVIDING IT TO THE UN GROUP OF EXPERTS INVESTIGATING CW USE. OTHER STEPS ARE NOW BEING CONSIDERED BY THE ADMINISTRATION.

Q. Would the possession or use of toxins be a violation of international law, particularly the 1925 Geneva Protocol or the Biological Weapons Convention?

A: WE BELIEVE THAT THE POSSESSION AND USE OF TOXINS IS A VIOLATION OF BOTH THE 1925 GENEVA PROTOCOL AND THE BIOLOGICAL WEAPONS CONVENTION, AS WELL AS THE RULES OF CUSTOMARY INTERNATIONAL LAW OF ARMED CONFLICT. THE BWC SPECIFICALLY COVERS TOXINS (HOWEVER PRODUCED), AND PROHIBITS THEIR MANUFACTURE OR RETENTION FOR NON-PEACEFUL PURPOSES, AS WELL AS THEIR TRANSFER TO ANY RECIPIENT OR ANY ASSISTANCE IN THEIR ACQUISITION FOR SUCH PURPOSES. THE GENEVA PROTOCOL PROHIBITS THE USE IN WAR OF BOTH CW AND BW, AND THEREFORE COVERS TOXINS, HOWEVER THEY ARE CATEGORIZED. THE RULES OF CUSTOMARY INTERNATIONAL LAW APPLY THIS PROHIBITION TO ALL STATES, WHETHER OR NOT THEY ARE PARTIES TO THE PROTOCOL ITSELF.

Q. Has the US charged the Soviets with violating the Biological Weapons Convention or the 1925 Geneva Protocol?

A. NO.

Q: Do you intend to?

A: WE CERTAINLY INTEND TO FOLLOW UP ON OUR CURRENT FINDINGS. IN THE PAST WE HAVE FORMALLY EXPRESSED OUR CONCERN TO THE SOVIET UNION, VIETNAM AND LAOS ONLY TO BE TOLD

THAT OUR CONCERNS WERE UNFOUNDED. BUT IT IS IMPORTANT TO RECOGNIZE THAT THIS IS NOT SOLELY A US PROBLEM. OTHER NATIONS OF THE WORLD SHARE OUR CONCERN AND CONSIDER THIS AN INTERNATIONAL ISSUE. THE UN RESOLUTION OF LAST DECEMBER CALLING FOR AN INTERNATIONAL INVESTIGATION OF REPORTS OF CW USE IS AN EXAMPLE OF THAT INTERNATIONAL CONCERN. FOR OUR PART WE INTEND TO CONTINUE TO PURSUE THIS ISSUE WITH THE SOVIETS, AND THROUGH THE APPROPRIATE INTERNATIONAL BODIES TO SEEK A SATISFACTORY RESOLUTION.

Q: What evidence do you have that the Soviet Union is involved in this issue?

A: THERE HAVE BEEN NUMEROUS REPORTS DIRECTLY LINKING THE SOVIETS TO CW ATTACKS IN AFGHANISTAN, LAOS, AND KAMPUCHEA. IT IS WELL KNOWN THAT THE SOVIETS HAVE BEEN SUPPORTING THE VIETNAMESE IN THEIR INVASION OF KAMPUCHEA. WE HAVE INFORMATION THAT THE SOVIETS HAVE FUNCTIONED IN A SUPPORT AND TECHNICAL ADVISORY ROLE IN CW RELATED MATTERS. TRICHOTHECENE IS NOT NATURAL TO SOUTHEAST ASIA. FURTHERMORE, THE QUANTITIES OF THIS TOXIN REPORTEDLY USED ARE BEYOND ANY KNOWN PRODUCTION CAPABILITY IN SOUTHEAST ASIA. WE WOULD NOTE, ALSO, THAT RESEARCH PROJECTS CONCERNING THEM HAVE BEEN IDENTIFIED AT WARSAW PACT RESEARCH INSTITUTES PREVIOUSLY ASSOCIATED WITH CBW RESEARCH. AT A MINIMUM, THE SOVIETS ARE AWARE OF, AND IN A GOOD POSITION TO STOP THESE CW ATTACKS. WE BELIEVE THEREFORE THAT THE

INTERNATIONAL COMMUNITY SHOULD INSIST ON SOVIET
COOPERATION IN PROVIDING INFORMATION AND IN TERMINATING
THE USE OF CHEMICAL AND/OR BIOLOGICAL WARFARE AGENTS.

Q. Where is the evidence, can we see it?

A. WE HAVE PREPARED A SUMMARY FACT SHEET FOR YOU. (FACT SHEET)

Q. Can you identify the researcher?

A. AT THIS TIME, WE ARE UNABLE TO DISCLOSE THE IDENTITIES
OF ANY PARTICULAR LABORATORIES OR PEOPLE INVOLVED IN
THIS ANALYSIS. WE WOULD POINT OUT HOWEVER THAT THE
CRITICAL ASPECTS OF THIS ANALYSIS HAVE BEEN CARRIED OUT
BY NON-GOVERNMENT SCIENTISTS WHO ARE UNAWARE OF THE
ORIGIN OF THE SAMPLES. AS THE REPORT OF THE ANALYSIS
SHOWS, THE ANALYSTS WERE GIVEN THREE SAMPLES; A BLANK
(I.E., NO TOXIN), A CONTROL SAMPLE (I.E., KNOWN
INTOXICATION OF TOXIN), AND THE UNKNOWN SAMPLE.

Q. Have you briefed the Congress?

A. THIS INFORMATION IS NOW BEING SHARED WITH MEMBERS
OF CONGRESS AND THEIR STAFFS.

Q. Has the US produced these toxins, what is US policy on
toxins?

A. THE US IS NOT NOW PRODUCING TOXINS. WE HAVE ENDORSED
THE 1925 GENEVA PROTOCOL AND ARE A SIGNATORY TO THE
BIOLOGICAL WEAPONS CONVENTION. WE HAVE OPENED OUR
FORMER BW FACILITIES TO INTERNATIONAL INSPECTION,
AND HAVE CONSISTENTLY SUPPORTED INTERNATIONAL EFFORTS TO
PROHIBIT THE PRODUCTION, STOCKPILING, USE, OR TRANSFER

Q: Can you identify the Doctors?

A: A NUMBER OF PHYSICIANS, INCLUDING BOTH GOVERNMENT AND NON-GOVERNMENT, HAVE TRAVELED OVER THE YEARS TO SOUTHEAST ASIA TO INVESTIGATE THESE CLAIMS. THEIR CONCLUSIONS HAVE APPEARED IN A NUMBER OF PUBLIC DOCUMENTS INCLUDING OUR COMPENDIUM OF REPORTS, THE CONGRESSIONAL RECORD, AND ARTICLES IN VARIOUS MEDICAL JOURNALS. THESE PHYSICIANS HAVE INCLUDED OFFICERS OF THE US ARMY SURGEON GENERAL'S OFFICE IN THE SUMMER OF 1979, RELIEF ORGANIZATIONS IN SOUTHEAST ASIA, AND INTERNATIONAL HEALTH AND HUMANITARIAN ORGANIZATIONS. MOST OF THEIR REPORTING HAS BEEN OPEN TO THE PUBLIC. A RECENT REVIEW OF THIS DATA BY GOVERNMENT MEDICAL EXPERTS HAS CONFIRMED THE ACCURACY OF THE EARLIER REPORTING. THE RECENT ANALYSIS THAT IDENTIFIED THE TOXINS RATHER THAN TRADITIONAL CW AGENTS NOW EXPLAINS WHY THE EARLIER MEDICAL REPORTS WERE CONSIDERED AMBIGUOUS, (THAT IS, NO TRADITIONAL CHEMICAL AGENT OR GROUP OF AGENTS COULD EXPLAIN ALL THE REPORTED SYMPTOMS).

Q: Can we meet with these Doctors?

A: SOME OF THEM ARE HERE AND YOU WILL BE ABLE TO QUESTION THEM ON BACKGROUND. OTHERS HAVE BEEN PUBLICLY IDENTIFIED PREVIOUSLY.

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Q. How does the US plan to proceed from here?

A. AS WE HAVE SAID, WE ARE IN THE PROCESS OF PROVIDING THIS INFORMATION TO THE UNITED NATIONS, AND WE INTEND TO RAISE IT IN OTHER APPROPRIATE INTERNATIONAL ORGANIZATIONS THAT DEAL WITH THIS ISSUE. WE INTEND TO RAISE IT PRIVATELY, NOT ONLY WITH THE SOVIETS, BUT WITH OUR FRIENDS AND ALLIES AS WELL. THIS NEW EVIDENCE WILL HAVE AN IMPORTANT IMPACT ON THE VERIFICATION AND COMPLIANCE REQUIREMENTS FOR FUTURE ARMS CONTROL TREATIES.

Q: Do we believe the yellow powder has been used in Afghanistan?

A: WE HAVE RECEIVED REPORTS OF DEATHS FROM YELLOW POWDER BEING USED IN AFGHANISTAN.

Q. What effect will this new evidence of CBW use have on US-Soviet relations?

A. AS I HAVE NOTED, THE US HAS BEEN CONCERNED ABOUT REPORTED USE OF LETHAL CHEMICAL AGENTS IN AFGHANISTAN AND SOUTHEAST ASIA FOR SOME TIME, AND THESE CONCERNS HAVE ALREADY HAD A NEGATIVE IMPACT UPON OUR RELATIONS WITH THE SOVIET UNION. THIS NEW EVIDENCE REINFORCES OUR CONCERNS. WE WOULD EXPECT THIS EVIDENCE WOULD ALSO STIMULATE HEIGHTENED CONCERN ELSEWHERE IN THE INTERNATIONAL COMMUNITY, PERHAPS ALSO AMONG GOVERNMENTS WHICH HAD NOT PREVIOUSLY FOCUSED UPON THIS ISSUE. THIS IS, AFTER ALL, MUCH MORE THAN A US-SOVIET BILATERAL ISSUE. IT IS A SITUATION OF DIRECT AND LEGITIMATE CONCERN TO THE ENTIRE INTERNATIONAL COMMUNITY.

Q: What effect will this new information have for US arms control policy?

A. THIS NEW EVIDENCE WILL HAVE AN IMPORTANT IMPACT ON THE VERIFICATION AND COMPLIANCE REQUIREMENTS FOR FUTURE ARMS CONTROL AGREEMENTS.

Q. Will you raise this matter with Gromyko?

A. WE HAVE ALREADY FORMALLY RAISED THE ISSUE OF REPORTED CHEMICAL WEAPONS USE IN AFGHANISTAN AND SOUTHEAST ASIA WITH THE SOVIET UNION AND BASED ON THIS NEW INFORMATION WILL DO SO AGAIN. I AM NOT PREPARED AT THIS TIME TO GO FURTHER IN DISCUSSING HOW AND WHEN WE WILL DO SO.

Q. How is this new information related to the Sverdlovsk incident?

A. OBVIOUSLY THESE ARE RELATED ISSUES WHICH RAISE MOST SERIOUS CONCERNS ABOUT COMPLIANCE WITH EXISTING ARMS CONTROL AGREEMENTS. AS YOU KNOW WE HAVE RAISED THE SVERDLOVSK INCIDENT WITH THE SOVIETS ON SEVERAL OCCASIONS WITHOUT SATISFACTORY RESPONSE. WE WILL BE CONSIDERING WHAT NEXT STEPS TO TAKE IN LIGHT OF THAT RESPONSE AND OF THIS NEW INFORMATION.

FACT SHEET

Reports of the use of chemical warfare agents in Southeast Asia date back to 1976. The US has publicly expressed its concern about these events on numerous occasions over these years. We have privately and formally expressed our concern to the Soviet, Vietnamese and Laotian governments only to be told that our concerns are unfounded. In June of 1980, we prepared a 125 page compendium of reports of CW use and used that compendium as a basis for supporting the December 1980 UN Resolution to establish an impartial international investigation into reports of CW use. We followed that up with an update to the compendium in March of 1981.

After earlier unsuccessful attempts to obtain physical evidence of CW use, we have recently uncovered significant--though preliminary--information to demonstrate clearly that our concerns were entirely justified. Specifically, we believe we have obtained good evidence that rather than a traditional lethal chemical agent, three potent mycotoxins of the trichothecene group have been used. A mycotoxin is a poison typically produced in nature by living organisms.

Analysis of a leaf and stem sample from Kampuchea has revealed high levels of mycotoxins of the trichothecene group. The levels detected were up to twenty times greater than any recorded natural outbreak. Since normal background levels of these toxins are essentially undetectable, the high levels found are considered to be abnormal, and it is highly unlikely that such levels could have occurred in a natural intoxication. In point of fact, these mycotoxins do not occur naturally in Southeast Asia.

Symptoms associated with these three lethal toxins specifically include rapid onset of vomiting, multiple hemorrhages of mucus membranes, bloody diarrhea, and severe itching and tingling of skin with formation of multiple small blisters, and death.

The possession and use of toxins is a violation of both the 1925 Geneva Protocol and the 1972 Biological Weapons Convention, as well as the rules of customary international law of armed conflict.

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These toxins are produced by fusarium (fu-sare-e-um) fungi which are toxic to man and animals. They are chemically quite stable and can be produced in large quantities. Preparation does require, however, large scale biological fermentation facilities, and no such facilities are known to exist in Southeast Asia.

Over the past several years a number of medical doctors working on this problem have visited Southeast Asia. They visited the borders in question, interviewed and examined refugees, reviewed medical records, including public health data, and have spoken directly with eyewitnesses to events in both Laos and Kampuchea.

Detailed analysis of this and other information leads us to conclude that mycotoxins--not traditional chemical warfare agents--produced the bizarre effects which caused in rapid sequence: dizziness; severe itching or tingling of skin, with formation of multiple small hard blisters; nausea; coughing of blood-tinged material; choking; vomiting of massive amounts of blood; shock; and death of those victims directly under the sprays. For those on the periphery of the attacks or who ate or drank contaminated food or water, symptoms took longer to develop (days rather than minutes to hours) and usually led to death within two weeks if no treatment were given.

The similarities between the sequence and type of medical effects of the toxins described above are striking when compared with those elicited from witnesses and victims.

The test results we have recently obtained together with the information provided by the physicians who have visited Southeast Asia represents strong and compelling, but nonetheless preliminary, evidence that the lethal agents used are mycotoxins. I want to caution you that there are certainly other agents being used that we have not yet identified. Incapacitating and riot control agents as well as other possible lethal agents may be involved. We are attempting to obtain additional information from Laos and Kampuchea in an effort to obtain corroborative evidence.

We are sharing this information with the UN group of experts investigating CW use as well as other governments throughout the World.

Attachments:

Summary of Reports on Use of Chemical/Biological
Warfare Agents
Report on Sample Analysis

SUMMARY OF REPORTS ON USE OF
CHEMICAL BIOLOGICAL WARFARE AGENTS

The US Government for several years has been analyzing the many reports from public and intelligence sources that several thousand deaths have been caused by toxic "yellow rain" or powder. The deaths have occurred primarily in northern Laos against the Hmong tribesmen, in Kampuchea near the Thai border, and in Afghanistan. Some incidents could be attributed to the use of more "conventional" riot-control agents, blister agents, and possibly incapacitants. However, the high death rate when Soviet aircraft (including AN-2, AN-12, and helicopters) were reported to be disseminating yellow-powder--and consistent bizarre symptoms--led the intelligence community to embark on a new collection effort.

Over the past several years a number of medical doctors working on this problem have gone to Southeast Asia. They visited the borders in question, interviewed and examined numerous refugees, reviewed medical records, including public health data, and spoke directly with many eyewitnesses to events in both Laos and Kampuchea. A recent trip by an American forensic medical specialist reviewed this data to confirm these previous findings. Detailed analysis of all sources taken together has led to the conclusion that chemicals called mycotoxins--not traditional chemical warfare agents--produced the bizarre effects in rapid sequence caused dizziness, nausea, coughing of blood-tinged material, choking, vomiting of massive amounts of blood, shock, and death in those directly under the yellow powder. For those on the periphery of the attacks or who eat or drink contaminated food or water, symptoms take longer to develop (days rather than minutes to hours) and usually lead to death within two weeks if no treatment is given.

The symptoms produced by these mycotoxins are similar to those caused by the unidentified agent employed in Laos, Kampuchea, and Afghanistan.

The agent has been described as "yellow rain" by witnesses and victims. Its name comes from the fact that the agent is released from aircraft as a yellow powder that floats down covering the ground, structures, vegetation, and people below it. In addition to the symptoms induced in man and animals described above, plants develop "blotches". A very common finding has been the appearance of numerous scattered, very small (about 1 MM) scorched or dark circles with holes in the center on leaf surfaces after the "yellow rain" has fallen. On close examination, these marks did not have the appearance of any known effect from traditional CW material, herbicides, or plant pathogens. A peculiar quality of the trichothecene toxin is the production of just such an unusual effect by causing multiple foci of minute biochemical oxidation or burns in vegetation.

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Mycotoxins occur naturally in the environment. History has recorded several natural outbreaks of toxin-related diseases which have resulted in thousands of deaths. The outbreak of St. Vitas Dance in the Middle Ages, for example, has been attributed to a toxin. In 1944, thirty percent of the population of Orenburg, near Siberia in the Soviet Union, became seriously ill from a natural infestation of Trichothecene toxin, and over ten percent of the entire population of the Orenburg District actually died. Other outbreaks attributed to red mold toxicosis have occurred in Japan, Europe and the United States.

Mycotoxins can be produced in large quantities. The facilities needed to produce mycotoxins are similar to those needed to produce pharmaceutical-grade antibiotics. However, these facilities do not exist in Southeast Asia in sufficient numbers or sizes to produce the quantities of "yellow powder" reportedly used and those mycotoxins are not native to warm climates, i.e. Southeast Asia. The Soviet Union, on the other hand, does have the necessary facilities to easily produce the quantities reported. Mycotoxins have figured prominently in Soviet scientific literature since the 1930s, and research projects concerning them have been identified at Warsaw Pact institutes previously associated with chemical and biological warfare research.

REPORT ON SAMPLE ANALYSIS

Chemical analysis of the leaf and stem sample from an area near the Thai/Kampuchea border where CW attacks have been reported has revealed the presence of abnormally high levels of trichothecene toxins. This sample, (coded Sample A): positive control sample to which T2 toxin was added (coded Sample B); and negative control sample (coded Sample C) were forwarded to a leading mycotoxin detection expert for analysis. Researcher was given no information concerning the history or content of the samples, but was requested to analyze the three unknowns labeled only A, B, and C for the presence of trichothecene toxins. Method of analysis was a ferric gel procedure followed by selected ION monitoring on computerized gas chromatograph/ mass spectrometer (Hewlett-Packard 5985B). No trichothecenes were detected in negative control Sample C and T2 toxin was detected in spiked positive control, Sample B. Sample A (Suspected CW Sample) was found to contain nivalenol, deoxynivalenol, and T2 toxin. These three compounds are potent toxins of the trichothecene group. Levels of deoxynivalenol and nivalenol detected were up to 20 times greater than that reported to occur when vegetation is naturally contaminated by trichothecene toxins. Such high levels are extremely unlikely to occur as a result of natural intoxication according to the mycotoxin expert. There is a striking similarity between the symptoms produced by trichothecene toxins and the unidentified chemical agent allegedly employed in Laos, Kampuchea, and Afghanistan. Symptoms associated with trichothecene poisoning include rapid onset of vomiting, multiple hemorrhage of mucus membranes, diarrhea, and severe itching or tingling of skin with formation of small blisters. All of the trichothecenes produce similar symptoms, however, there are some differences in the degree of severity. nivalenol and deoxynivalenol have fewer skin irritative effects than T2; nivalenol is a slightly stronger hemorrhagic, while deoxynivalenol (also known as vomitoxin) causes very severe vomiting.

Trichothecenes are chemically quite stable and can easily be produced in large quantities. The circumstantial evidence that trichothecenes may have been employed as chemical agents is strong and is supported by the analysis described above.